

## Wi-Fi 5GHz Antenna

02102142-07905M

Engineering Data Sheets

### Galtronics Embedded Antenna

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## Revision History (Required)

Revisions	Date	Note
S1	Oct 18, 2023	Initial draft
S2	Dec 12, 2023	Updated

## Disclaimers

The document is proprietary, which may be changed without notice. Please communicate with Galtronics sale team to verify before finalizing your product design.

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## 1. Galtronics Wi-Fi 5GHz Antenna

The Galtronics 02102142-07905M antenna is a balanced dipole type Wi-Fi 5GHz Antenna that operates in 5150-5850 MHz band. It provides high efficient radiation with good cost benefit. The antenna can be mounted on a customer device with double sided adhesive foam tape or antenna carrier and connected to the radio through a cable with U.FL connector.

## 2. Features

- Operates in 5150-5850MHz band
- Peak gain: 4.8 dBi in 5000 MHz band
- High efficiency
- U.FL connector interface
- Mounted by double sided adhesive foam tape or antenna carrier

## 3. Specifications and Interface

<b>Standard</b>	Wi-Fi 5GHz Band
<b>Frequency Range</b>	5150 – 5850 MHz
<b>Peak Gain</b>	4.8 dBi in 5000 MHz band
<b>VSWR</b>	2:1
<b>Feed Impedance</b>	50Ω
<b>Power Handling</b>	30 dBm
<b>Interface</b>	U.FL
<b>Antenna Dimensions</b>	20.86 x 8.18 x 1.04 mm (L x W x T)
<b>Temperature Range</b>	Operating: -20° C to +60° C (-4° F to +140° F) Storage: -20° C to +60° C (-4° F to +140° F)
<b>Humidity Range</b>	Operating: 10% to 85% non-condensing Storage: 5% to 90% non-condensing

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### 4. Return Loss

The antenna was mounted inside the housing with 1.6mm thickness double-sided tape, and cable loss is included in test results.

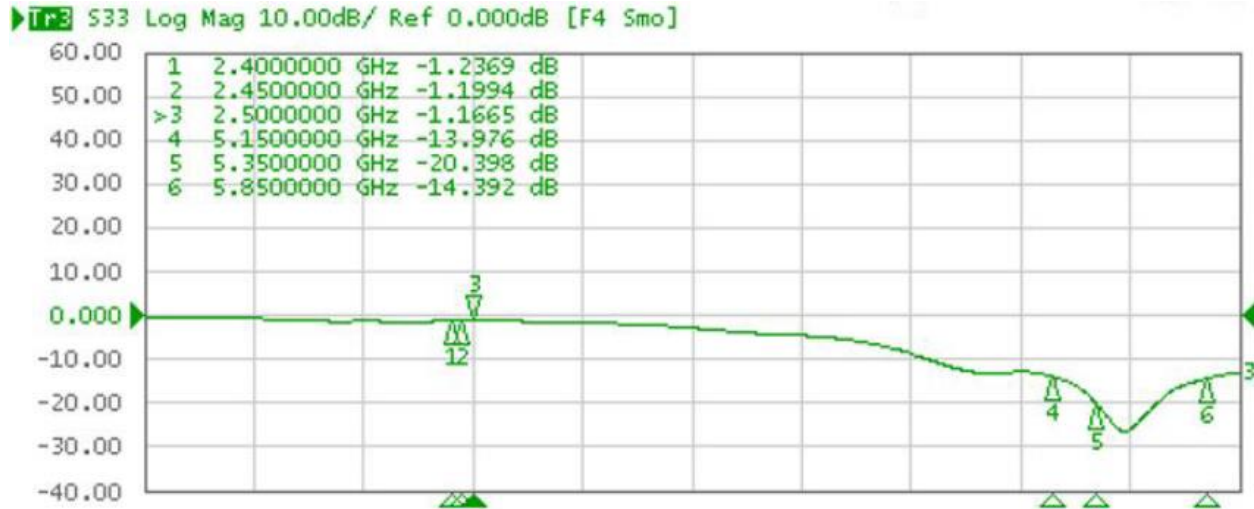


Figure 1 Return Loss

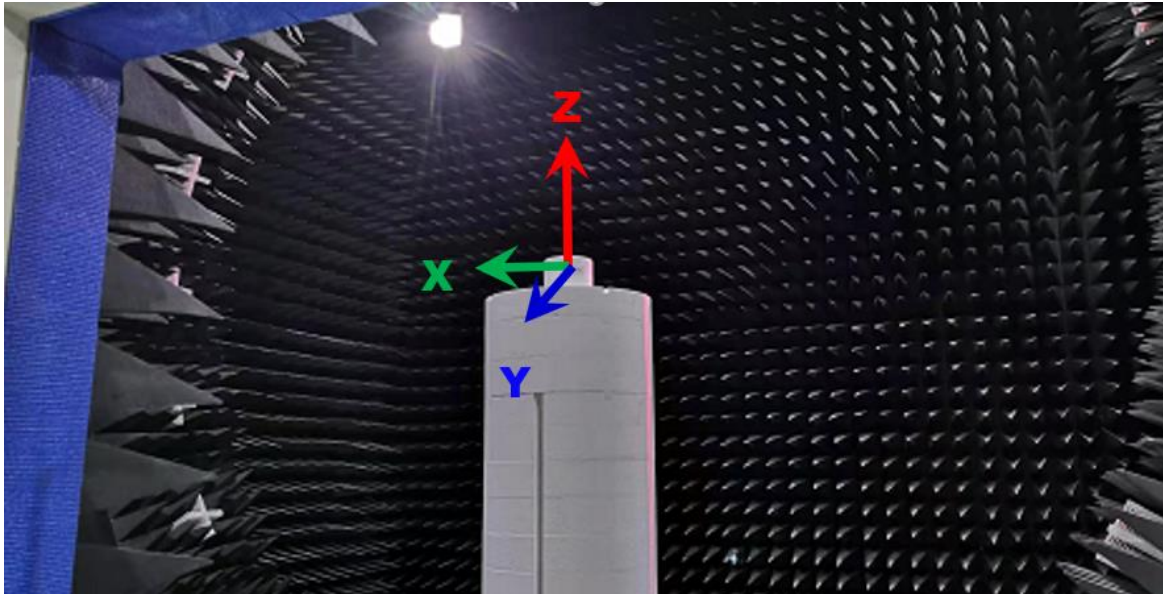
### 5. Gain, Directivity and Efficiency

Table 1. Peak Gain, Directivity and Efficiency

	Freq (MHz)	Peak Gain (dBi)	Antenna Directivity (dBi)	Terminal Efficiency (%)
5GHz	5150	4.2	5.7	71.97%
	5250	4.3	5.9	70.13%
	5350	4.7	6.0	73.43%
	5750	4.7	6.0	74.95%
	5850	4.8	6.1	73.37%
Average				72.77%

## 6. Radiation Pattern

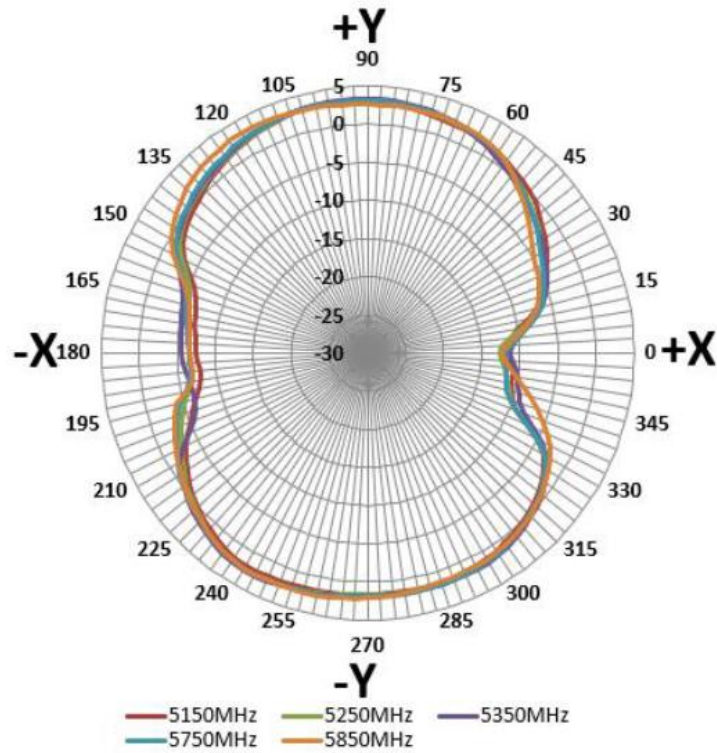
Figure 2 shows the antenna measurement coordinate system in anechoic chamber. Azimuth plane is XY plane ( $\Theta=0^\circ$ ), Elevation 1 plane is XZ plane ( $\Phi=0^\circ$ ) and Elevation 2 plane is YZ plane ( $\Phi=90^\circ$ ).



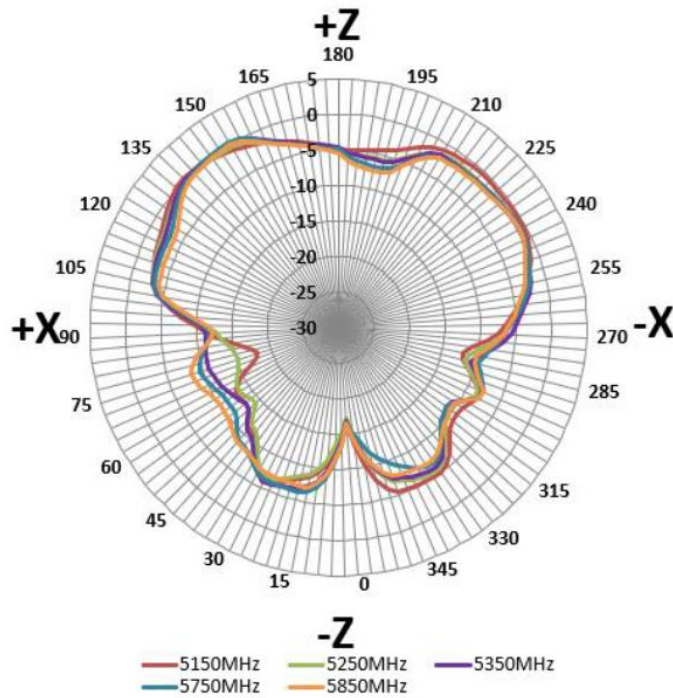
*Figure 2 Measurement Orientation*

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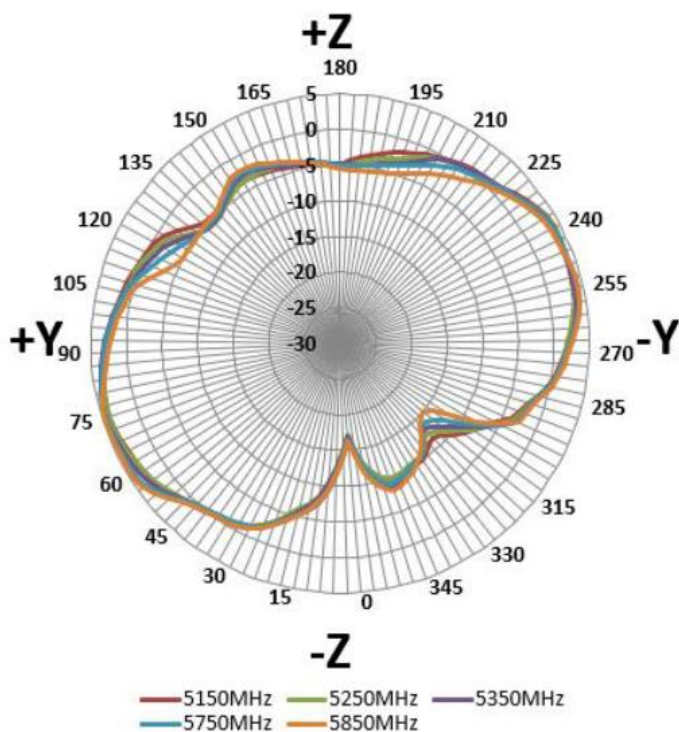
Figure 3 (A), (B) and (C) show the radiation pattern in three major planes.



(A). Azimuth plane (XY plane) radiation pattern



(B). Elevation 1 plane (XZ plane) radiation pattern



(C). Elevation 2 plane (YZ plane) radiation pattern

*Figure 3 Radiation Patterns of Wi-Fi 5GHz Antenna*